Air Force Research Laboratory | AFRL

*Science and Technology for Tomorrow's Aerospace Forces*

## *Success Story*

# REAL-TIME INFRARED SCENE SIMULATOR TRANSITIONED AND COMMERCIALIZED

The Real-Time Infrared Scene Simulator (RISS), a Small Business Innovation Research (SBIR)-funded breakthrough, provides simulation technology for rapidly implementing software modifications to infrared missile warning receivers and significantly reduces response time and cost for meeting urgent operational needs. RISS is a new core simulation technology that revolutionizes the Air Force methodology for developing software changes for electro-optical missile warning receivers.

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## Accomplishment

Under the Air Force SBIR program, the Sensors Directorate developed, demonstrated, and transitioned real-time hardware-in-the-loop simulation technology enabling Warner-Robins Air Logistics Center (WR-ALC) to meet critical United States Special Operations Command (USSOCOM) mission needs. This technology is the result of highly successful leading-edge SBIR research by Amherst Systems, Inc. of Buffalo, New York. Amherst Systems' engineers commercialized this pioneering SBIR technology breakthrough as one of their standard simulator products for the development and integration of electro-optical missile warning receivers for Department of Defense weapon systems.

## Background

The Electronic Warfare Branch applied two SBIR Phase II initiatives with their Integrated Defensive Avionics Laboratory to a USSOCOM special operations force need for a rapid prototyping capability to modify infrared missile warning receiver software. The Electronic Warfare Branch worked with the WR-ALC Electronic Warfare Management Directorate's Special Programs Engineering Branch and the SBIR contractors to form a government/contractor integrated product team to transition this SBIR technology and meet the urgent USSOCOM need.

This team's effort resulted in the development and transition of RISS, enabling WR-ALC to develop their Missile Warning Receivers Integrated Support Station, a revolutionary concept for rapidly modifying the software of electro-optical missile warning receivers.

This technology provides an unprecedented cost-effective capability for developing and implementing these software changes in a laboratory environment through high fidelity hardware-in-the-loop simulation, significantly reducing the requirements for flight test.

Sensors
Support to the Warfighter

## Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTT, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (01-SN-02)